AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Original) A gas concentration detector comprising:

a sensor cell, wherein the sensor cell detects a concentration of a specific gas component in a gas to be measured when the gas is introduced into a chamber;

a monitor cell, wherein the monitor cell detects an oxygen concentration in the chamber, and the sensor cell and the monitor cell have different oxygen reactivities; and

electrical correction means for substantially matching output responses of the sensor cell and the monitor cell to a variation in oxygen concentration with each other.

2. (Original) The gas concentration detector according to claim 1, wherein means for restraining an electrical reaction of at least one of the sensor cell and the monitor cell is provided as the electrical correction means.

3. (Original) The gas concentration detector according to claim 2, wherein the means for restraining the electrical reaction is a filter for passing or removing a specific frequency component in an output of any one of the sensor cell and the monitor cell.

4. (Original) The gas concentration detector according to claim 3, wherein the means for restraining the electrical reaction is a band-pass filter.

5. (Original) The gas concentration detector according to claim 1, wherein signal processing means for correcting an output of at least one of the sensor cell and the monitor cell based on an amplitude and a cycle of a pulsation of the output is provided as the electrical correction means.

6. (Original) The gas concentration detector according to claim 5, wherein the signal processing means variably sets a correction constant based on the amplitude and the cycle of the pulsation of the output of any one of the sensor cell and the monitor cell.

7. (Original) The gas concentration detector according to claim 6, wherein the signal processing means performs smoothing correction on the respective outputs of the sensor cell and the monitor cell by using smoothing constants, respectively determined, based on the amplitudes and the cycles of the pulsations of the outputs of the sensor cell and the monitor cell.

8. (Original) The gas concentration detector according to claim 7, further comprising:

a pump cell for exhausting oxygen in the gas to be measured, introduced into the chamber, to an exterior or for introducing oxygen from the exterior so as to adjust the oxygen concentration in the chamber.

9. (Original) The gas concentration detector according to claim 1, further comprising:

a pump cell for exhausting oxygen in the gas to be measured, introduced into the chamber, to an exterior or for introducing oxygen from the exterior so as to adjust the oxygen concentration in the chamber.

10. (Currently Amended) The gas concentration detector according to claim ~~1~~9, the pump cell further comprising:

a solid electrolyte body having oxygen ion conductivity and a pair of electrodes formed on surfaces of the solid electrolyte body, wherein

the oxygen concentration in the chamber is controlled by controlling a voltage applied to the pair of electrodes in accordance with a current value of a current flowing between the pair of electrodes or in accordance with the output of the monitor cell.

11. (Original) The gas concentration detector according to claim 10, wherein the sensor cell further comprising:

a solid electrolyte body having oxygen ion conductivity and a pair of electrodes formed on surfaces of the solid electrolyte body; and

a concentration of the specific gas component and a concentration of remaining oxygen in the chamber are detected based on a current value of a current flowing between the pair of electrodes when a predetermined voltage is applied to the pair of electrodes.

12. (Original) The gas concentration detector according to claim 11, wherein the monitor cell further comprises:

a solid electrolyte body having oxygen ion conductivity;

a pair of electrodes formed on surfaces of the solid electrolyte body; and

a concentration of remaining oxygen in the chamber is detected based on a current value of a current flowing between the pair of electrodes or based on electromotive force generated between the pair of electrodes when a predetermined voltage is applied to the pair of electrodes.

13. (Original) The gas concentration detector according to claim 1, wherein the concentration of the specific gas component in the gas to be measured is detected based on a difference in output between the sensor cell and the monitor cell.

14. (Original) The gas concentration detector according to claim 12, wherein the concentration of the specific gas component in the gas to be measured is detected based on a difference in output between the sensor cell and the monitor cell.

15. (Original) The gas concentration detector according to claim 1, wherein the sensor cell and the monitor cell are provided in the chamber so as to be proximate to each other.

16. (Original) The gas concentration detector according to claim 14, wherein the sensor cell and the monitor cell are provided in the chamber so as to be proximate to each other.

17. (Currently Amended) The concentration detector according to claim 1, wherein the specific gas component is NOx; and

~~the electrode~~ electrodes of the sensor cell, provided so as to face the chamber, ~~is~~ are made of an electrode material active to reduction of NOx, and ~~the electrode~~ electrodes of the monitor

cell, provided so as to face the chamber, ~~is~~ are made of an electrode material inactive to reduction of NOx.